

## **ABSTRACT**

The present invention provides a peptide sequence, a phage, an artificial protein or a chimeric molecule having a binding ability to titanium, silver, silicon, necessary to confer higher capacity of titanium, silver, silicon material with the use of soft matters, or to provide a complex of a peptide, a phage, an artificial protein or a chimeric molecule, and titanium, having the peptide sequence and functional peptide sequence. By bringing into contact a population of phage wherein said phage of said population collectively express a library of different peptide sequence, recovering titanium bound to phage particles via peptide sequence by centrifugation, proliferating the obtained phage particles in bacteria, and repeating panning operation and concentrating titanium binding phage clones. Among the phage clones, peptide RKLPDAPGMHTW and the like is identified. As for a peptide having a binding ability to titanium, silver, silicon, RKLPDAs or RALPDA can be exemplified.